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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/052,538	01/23/2002	Tetsunori Kaji	520.35237VX3	4015

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EXAMINER

DANG, THI D

ART UNIT	PAPER NUMBER
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1763

DATE MAILED: 10/03/2002

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Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/052,538

Applicant(s)

KAJI ET AL.

Examiner

Thi Dang

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 14-18 and 23-27 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 14-18 and 23-27 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 23 January 2002 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☒ Certified copies of the priority documents have been received in Application No. 08/808,805.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_.

***Claim Rejections - 35 USC § 102***

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) do not apply to the examination of this application as the application being examined was not (1) filed on or after November 29, 2000, or (2) voluntarily published under 35 U.S.C. 122(b). Therefore, this application is examined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

2. Claims 14-16 are rejected under 35 U.S.C. 102(e) as being anticipated by *Arai* et al.

*Arai* discloses a plasma processing apparatus, which includes: a pair of electrodes for generating plasma; a high frequency power source for generating plasma that is capable of applying a voltage of 13.56 MHz or 40 MHz (i.e., within the range of 10 MHz – 500 MHz); and means for applying a pulse bias to the substrate-holding electrode (col. 4, lines 5-27; Figs. 1 and 18). The power supply system of *Arai* also has means for preventing voltage charge-up (col. 6, lines 36-65). *Arai* also discloses that an electrostatic chuck (31) may be used for holding the substrate (Fig. 1). The apparatus disclosed by *Arai* meets the structural limitations of the claimed apparatus.

***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 17 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over *Arai* et al in view of *Ogasawara* et al.

*Arai* does not disclose a gap of 10 mm to 50 mm between the parallel electrodes.

*Ogasawara* teaches that it is conventional in the art to have an electrode gap of 10 mm to 20 mm during etching (col. 12, lines 57-58). It would have been obvious to have a gap of 10 mm to 20 mm between the electrodes in *Arai*'s apparatus during etching because it is conventional in the art.

5. Claims 23-27 are rejected under 35 U.S.C. 103(a) as being unpatentable over *Kadomura* in view of *Kofuji* et al.

*Kadomura* discloses a plasma processing apparatus, which includes: a section (21) for generating an upstream plasma and supplying radicals to the processing chamber; means (31) for generating plasma in the processing chamber; a bias supplying means (41) connected to the wafer holder. The apparatus of *Kadomura* has all of the claimed structures recited in claim 23 except an electrostatic attracting means. *Kofuji* teaches that it is conventional in the art to place an electrostatic chuck on the wafer holder in order to hold the wafer by electrostatic attracting force. Therefore, it would have been obvious to provide an electrostatic chuck on the wafer holder of *Kadomura* because it is conventional to hold a wafer by electrostatic attracting force.

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*Kofuji* also teaches to provide means for applying a pulse bias to the wafer in order to eliminate electron shading during plasma processing (col. 2, lines 13-28). It would have been obvious to provide *Kofuji*'s system of applying a pulse bias in *Kadomura* because this modification would eliminate electron shading during plasma processing.

### ***Claim Objections***

6. Claim 18 is objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form. Claim 18 is dependent on either claim 16 or 17. However, the limitation recited in claim 18 already exists in claim 16.

### ***Conclusion***

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. *Gorin*, *Corn et al*, *Tsai et al*, *Doki et al*, *Collins et al* are cited to show other plasma processing apparatus.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thi Dang whose telephone number is (703) 308-1973. The examiner can normally be reached on Monday to Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gregory Mills can be reached on (703) 308-1633. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9310 for regular communications and (703) 872-9311 for After Final communications.

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Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.

*M. Dang*  
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